REMARKS/ARGUMENTS

Claims 9-21 are pending.

Claims 9-21 are rejected under 35 U.S.C. 102(b) as being anticipated by Shoroff et al., U.S. Patent No. 6,023,744.

The present invention is directed to a storage system. As recited in independent claim 9 "when a storage system detects that a remaining amount of its own storage area has become less than a predetermined value" then "a remote storage area is provided by performing a mount operation on one or more disk units at a remote storage system... ." The remote storage area is then used as storage in the storage system.

It appears the Examiner cited Fig. 12 and column 10, lines 45 - 54 of Shoroff et al. for allegedly teaching detecting "a remaining amount ... less than a predetermined value" and for providing "a remote storage area ... at a remote storage system." These aspects of the present invention were recited in claim 9 as originally filed and remain in claim 9 as amended.

Shoroff et al. at column 10, lines 45 - 46 disclose "Step 206 checks to determine if the processed data (40 kilobytes) will fit in the remaining size in the target file 74." Respectfully, this checking step does not constitute detecting "a remaining amount ... less than a predetermined value." Shoroff et al. do not disclose the use of "a predetermined value", but instead compare the amount of processed data (which can be any amount for any given instance) against the remaining size of the target file (which can be any amount for any given instance). It is not at all clear how comparing the size of processed data to the remaining size of a file constitutes the use of "a predetermined value." It is earnestly and respectfully submitted that the Examiner has not shown that Shoroff et al. teach using "a predetermined value."

Shoroff et al. at column 10, lines 50 - 54 disclose that "Had sufficient space not been available in the target file 74, step 206 alternatively would have branched to step 208 where the size of the target file 74 would be increased by requesting additional disk space from the file system." Shoroff et al. describe increasing the size of the target file by requesting additional disk space from the file system. By contrast, claim 9 as originally filed recites providing "a remote storage area ... at a remote storage system." The target file in Shoroff et al. is increased by

simply allocating more disk space from the disk on which the target file was originally created. Shoroff et al. do not describe accessing additional space for the target file from a remote storage system, but rather from the same storage system.

The Examiner cited the I/O circuitry in Fig. 1 of Shoroff et al. and asserted that "Since this system has the ability to connect to one or more networked devices through the I/O circuitry 34 ..., the file system has the ability to acquire the additional space from remote storage. " *O.A. page 2, paragraph no. 2 (citing column 4, lines 39-45 of Shoroff et al.).* It is respectfully submitted that the Examiner's reasoning is in error. Simply having the ability to access a networked device does not in and of itself teach a specific aspect of the present invention such as obtaining "a remote storage area ... at a remote storage system."

The process of increasing the target file in Shoroff et al. is a process of simply requesting additional disk space from the file system. The present invention as recited in claim 9 provides "a remote storage area ... at a remote storage system." To further emphasize this distinction, claim 9 has been amended to recite that provisioning of the remote storage area includes "performing a mount operation on one or more disk units at a remote storage system." Clearly, Shoroff et al. do not show "performing a mount operation" to increase the size of their target file.

According to dependent claim 10, a further aspect of the present invention includes communicating from the storage system to the remote storage system "specifications such as a size and a logic format of said remote storage area." Shoroff et al. teach requesting additional disk space from the file system in order to increase the size of the target file. *Col. 10, lines 53 - 54.* Since Shoroff et al. simply obtain additional disk space from the filing system which is where the target file resides in the first place, there is no communication of "specifications such as a size and a logic format of said remote storage area."

According to dependent claim 12, a further aspect of the present invention is "data stored and managed in said remote storage area is copied to the storage area of said storage system when the storage area of said storage system is enlarged." Thus, when the storage system is subsequently enlarged, information that was stored in the remote storage area is copied to the now-enlarged storage area. In Shoroff et al., if the target file is too small, then additional disk

space is provided to the target file before any copying is performed. See the sequence of steps 206, 208, and 210 in Fig. 12 of Shoroff et al. Shoroff et al. do not show a subsequent copying of data from the target file to another target file.

Regarding claims 13 - 20, the Examiner asserted "Shoroff et al. discloses the storage system used in the method of operating a storage system according to claims 9-12 comprising at least one unit providing said storage area (memory 24), and a communication interface (I/O 34) for communicating with said remote storage (disk drive 40). See Figure 1." *O.A., page 4, top of the page.*

Respectfully, it is believed the Examiner has erred in the description of the computer components shown by Shoroff et al. in Fig. 1. For example, memory (24) is not a "disk unit providing said storage area" as recited in claims 13 - 16. Rather, memory (24) is believed to be conventional random access memory (RAM) that is common in computers, and is conventionally connected to the processor (22)as show in Fig. 1. At best, the disk drive (40) shown by Shoroff et al. in Fig. 1 would correspond to the "disk unit" that is recited in claims 13 - 16. Given that disk drive (40) is the recited "disk unit", the figure does not show "one or more disk units at a remote storage system" as recited in claim 9, the independent claim from which claims 13 - 16 depend.

As for claims 17 - 20, if the recited "disk unit providing said remote storage area" reads on the disk drive (40) of Shoroff et al., then the recited "storage system" is not shown in Fig. 1 of Shoroff et al. Conversely, if the recited "storage system" corresponds to the disk drive 40 of Shoroff et al, then Fig. 1 does not show the recited "disk unit providing said remote storage area."

Independent claim 21 recites operating a storage system "wherein when a storage system detects that a remaining amount of its own storage area that is provided by at least one first disk unit installed in said storage system has become less than a predetermined value, a remote storage area that is provided by at least one second disk unit installed in a remote storage system in communication with said storage system is made available as said storage area by performing a mounting operation of said at least one second disk unit."

Shoroff et al. do not show "at least one first disk unit installed in said storage system." With respect, the Examiner has erred in making the assertion that this aspect of the present invention as recited in claim 21 reads on the memory (24) of Shoroff et al. It is earnestly submitted that memory (24) is not a disk storage component, but rather a random access memory (RAM) as is conventionally understood to be provided in computers.

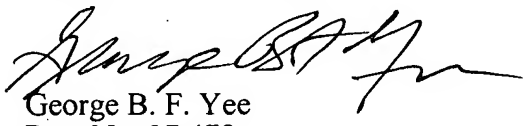
Claim 21 is further distinguished over Shoroff et al. insofar as claim 9 is distinguished over Shoroff et al. Claim 21 has been amended to include "performing a mounting operation." Shoroff et al. do not show this aspect of the present invention.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400, ext. 5252.

Respectfully submitted,



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